

CLAIMS

1. A shifting device for the shifting of a transmission with a shifting shaft (2), upon which said shaft a multiplicity of shifting forks (8, 10, 12, 14) are placed in an axial slidable manner for the carrying out of one shifting procedure, and having a selection apparatus (28, 30, 32, 42, 44, 46) for the choice of a shifting fork (8, 10, 12, 14) from the multiplicity of shifting forks (8, 10, 12, 14) to carry out the shifting procedure and with blocking means (52) for the prevention of the movement of non-chosen shifting forks (8, 10, 12, 14), whereby the blocking apparatuses (52) are placed on an essentially parallel, additional shaft (46), therein characterized, in that, an actuator (60) is provided, which axially displaces the shifting shaft (2) for the carrying out of the shifting program, in that on the said additional shaft (46) elements of the selection apparatus (42, 44) are provided and in that an additional actuator (48) is provided, to rotate the additional shaft (46) for the choice of a shifting fork (or a shifting lever) (8, 10, 12, 14) and for the prevention of the movement of non-chosen shifting forks .

2. A shifting device in accord with claim 1, therein characterized, in that the elements of the selection apparatus include for each shifting fork (8, 10, 12, 14) ring-shaped engagement units (28, 30, 32), which with the shifting fork (8, 10, 12, 14) are axially affixed and are slidable on the shifting shaft (2) for the carrying out of the shifting procedure, and are rotatable about the shifting shaft (2) for the selection of one of the shifting fork (8, 10, 12, 14) and have the elements of a come-along apparatus (20, 22), which enables an axial displacement of the ring shaped engagement units (28, 30, 32) by means of the axial movement of the shifting shaft (2) for the carrying out of the shifting procedure.

3. A shifting device in accord with claim 1 or 2, therein characterized, in that the ring shaped engagement units (28, 30, 32) on the shifting fork (8, 10, 12, 14) react with the blocking apparatuses (52) for the prevention of an axial movement of non-selected shifting fork on the shifting shaft (2).

4. A shifting device in accord with one of the claims 1 to 3, therein characterized in that the elements of the blocking apparatus include rotatable

blocking disks (52), the circumferential surface of which, located in the axial movement zone of the ring-shaped engagement units (28, 30, 32) extend inward, and the contour thereof is so designed, that the portion thereof, designed as segments (54) of the blocking disks (52) permit an axial movement of the ring shaped engagement units (28, 30, 32) on the shifting shaft (2), while other locations of the blocking disks (52) are enabled to prevent an axial movement of the ring-shaped engagement units (28, 30, 32).

5. A shifting device in accord with one of the claims 1 to 4, therein characterized in that the contoured disks (20, 22) possesses cutouts (24) for the ring-shaped engagement units (28, 30, 32), which coact with projections (16, 18) on the shifting shaft (2), in such a manner that the said projections (16, 18) penetrate the cutouts (24), if the corresponding shifting fork (8, 10, 12, 14) is not shifted and the projections (16, 18) push the contoured disks (20, 22) axially, if the selected shifting fork (8, 10, 12, 14) is displaced.

6. A shifting device in accord with one of the claims 1 to 5, therein characterized, in that the elements of the selection apparatus (28, 30, 32, 42, 44, 46) possess toothings (36, 38, 40), which mutually mesh and enable a rotation of the elements of the selection apparatus (28, 30, 32, 42, 44, 46) with respect to each other.

7. A shifting device in accord with one of the claims 1 to 6, therein characterized, in that only a part of the ring-shaped engagement unit (32) possesses toothing (36).

8. A shifting device in accord with one of the claims 4 to 7, therein characterized, in that that area of the blocking disks (52) designed as a cutout possesses toothing, which can mesh into the toothing of a ring-shaped engagement unit (28, 30).

9. A shifting device in accord with one of the claims 1 to 8, therein characterized, in that the elements (2, 8, 10, 12, 14, 20, 22) for the carrying out of the shifting procedure are constructed of steel or aluminum.

10. A shifting device in accord with one of the claims 1 to 9, therein characterized, in that the elements (28, 30, 32, 42, 44, 46) of the selection apparatus are made of aluminum or plastic.

11. A shifting device in accord with one of the claims 1 to 10, therein characterized, in that the elements (52) of the blocking apparatus are constructed of aluminum or plastic.

12. A shifting device in accord with one of the claims 1 to 11, therein characterized, in that a transmission (58) is provided for the ratio control of a rotational motion of the actuator (60) in an axial motion of the shifting shaft (2).

13. A shifting device in accord with one of the claims 1 to 12, therein characterized, in that electro-mechanical, pneumatic, or hydraulic actuators are provided.